# AWS

Introduction :

AWS is a cloud service from Amazon, which provides services in the form of building blocks, these building blocks can be used to create and deploy any type of application in the cloud.These services or building blocks are designed to work with each other, and result in applications that are sophisticated and highly scalable.

Services Provided :

- **Compute Services:**

  Services related to compute workloads
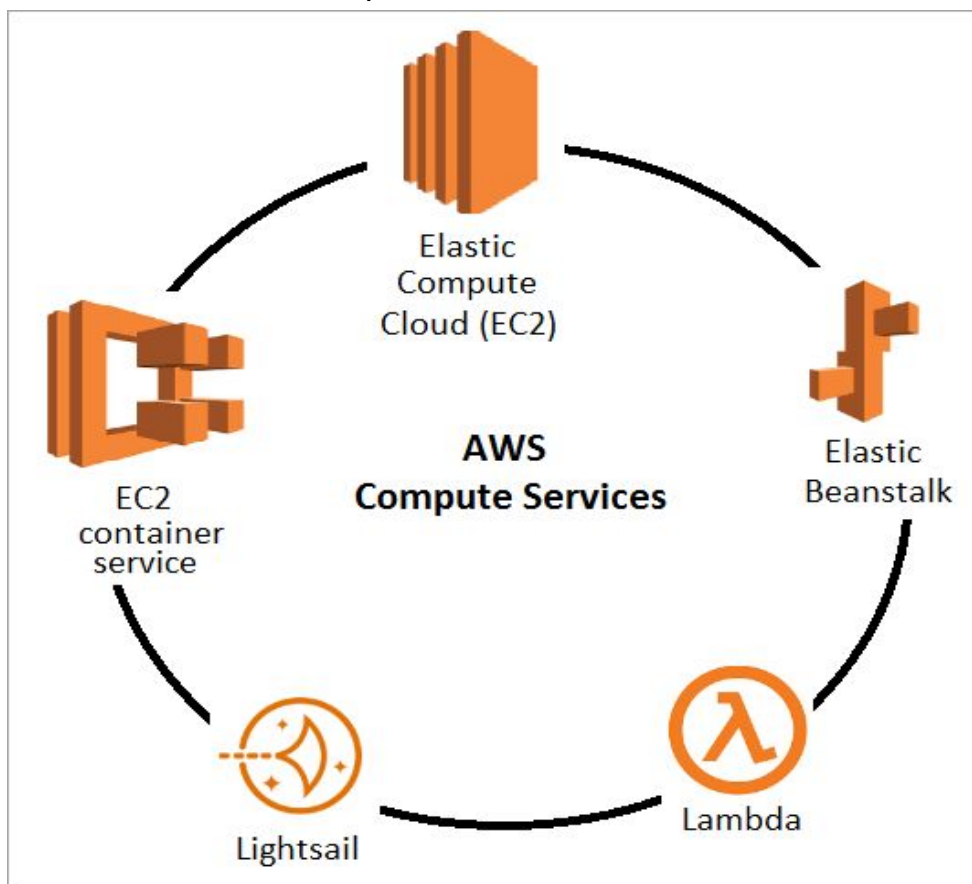
- **Storage Services**

The Storage domain includes services related data storage.

- **AWS S3**

This tool is used for internet back up, and it's the cheapest storage option in the object-storage category. The best part: you can retrieve stored data from almost anywhere whenever you need it.

- **Elastic Block Style (EBS)**

EBS provides block storage which is similar to hard drives to store any kind of data persistently. This can be attached to any EC2 instance and used as block storage, which even allows you to install any operating system.

- **AWS S3 Glacier**

The glacier is used mainly for archival and long-term data storage. This means that there is a low retrieval rate on this storage system due to which it is offered at an extremely cheap rate. It does also come with compliant security features to encrypt your data.

- **Elastic File System (EFS)**

EFS is a managed network file system that is easy to set up right from the amazon console or CLI. When you have multiple EC2 instances needed to access the same file system EFS helps in providing just that

AWS: Storage Choices

Amazon S3	Amazon Glacier	Amazon EBS	Amazon EFS
Durable object storage for all types of data	Archival storage for infrequently accessed data	Block storage for use with Amazon EC2	File storage for use with Amazon EC2
Economics	**Easy to Use**	**Reduce risk**	**Agility, Scale**
Pay as you go	Self service administration	Durable and Secure	Reduce time to market
No upfront investment No commitment	SDKs for simple integration	Avoid risks of physical media handling	Focus on your business, not your infrastructure

- **Database Services :**

  The Database domain is used for database related workloads.
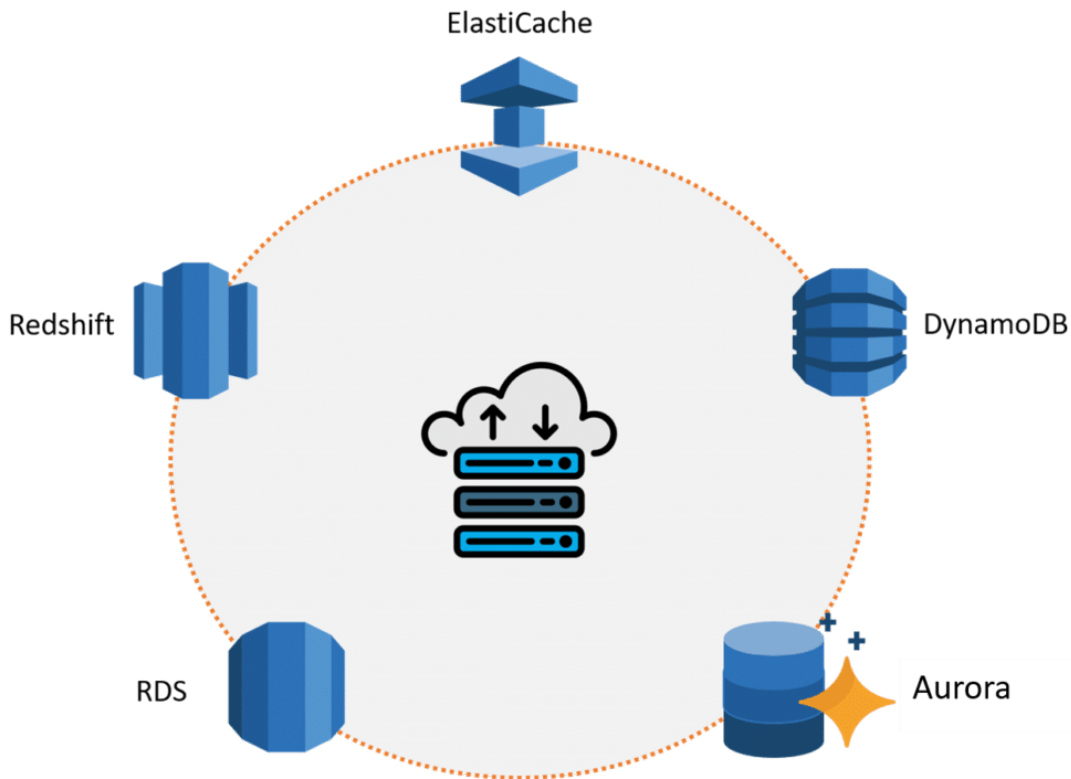
- **AWS RDS :**

  RDS is used to set up, operate, and scale a relational database in the cloud. It automates administrative tasks such as hardware provisioning, database setup, backups, and more.

- **Redshift :**

  It is a fast and fully managed data warehouse service in the cloud. Amazon affirms that the Redshift data warehouse delivers ten times faster performance than other data warehouses utilizing Machine Learning techniques

- **Aurora :**

  Amazon Aurora is fully managed by Amazon RDS. It is a relational database engine built for the cloud. Amazon Aurora is also completely compatible with MySQL. Since Amazon Aurora is fully managed by RDS,

all administrative tasks such as database setup, patching, backups, and more are automated.

- **DynamoDB :**

Amazon DynamoDB is a fast, fully managed, and flexible NoSQL database. It also supports document-based data. AWS affirms that DynamoDB delivers single-digit millisecond performance at any scale. DynamoDB comes with built-in Security, Backup, and Restore features.

- **Elasticache**

ElastiCache is a fully managed caching service that offers high-performance, cost-effective, and scalable caching solutions. Amazon ElastiCache provides two caching engines, namely Memcached and Redis.ElastiCache also improves applications' performance as it reduces disk reads.

● Migration Services :

The Migration domain is used for transferring data to or from the AWS Infrastructure
Some of migration services are :

- **AWS Database Migration Service**

You can use this service for both homogeneous (x to x) or heterogeneous (x to y) and on or offline migrations. DMS supports migration to Amazon RDS, Aurora, RedShift, DynamoDB, and DocumentDB.

- **AWS SnowBall**
Snowball is a strong choice for data transfer if you need to securely and quickly transfer terabytes to many petabytes of data to AWS services

● Networking and Content Delivery Services

The Networking and Content Delivery domain is used for isolating your network infrastructure, and content delivery is used for faster delivery of content

- **Route S3**

    This is a DNS service in the cloud that doesn't require you to maintain a separate DNS account. It's designed to provide businesses with a reliable and cost-effective method to route users to internet applications.

- ## Management Tools

    The Management Tools domain consists of services which are used to manage other services in AWS

    - **Cloudwatch**

        Monitor Resources and Applications

    - **CloudTrail**

        Track User Activity and API Usage

    - **Cloud Watch**

        Monitor Resources and Applications

- ## Security & Identity ,compliance services

    The Security & Identity, Compliance domain consist of services which are used to manage to authenticate and provide security to your AWS resources
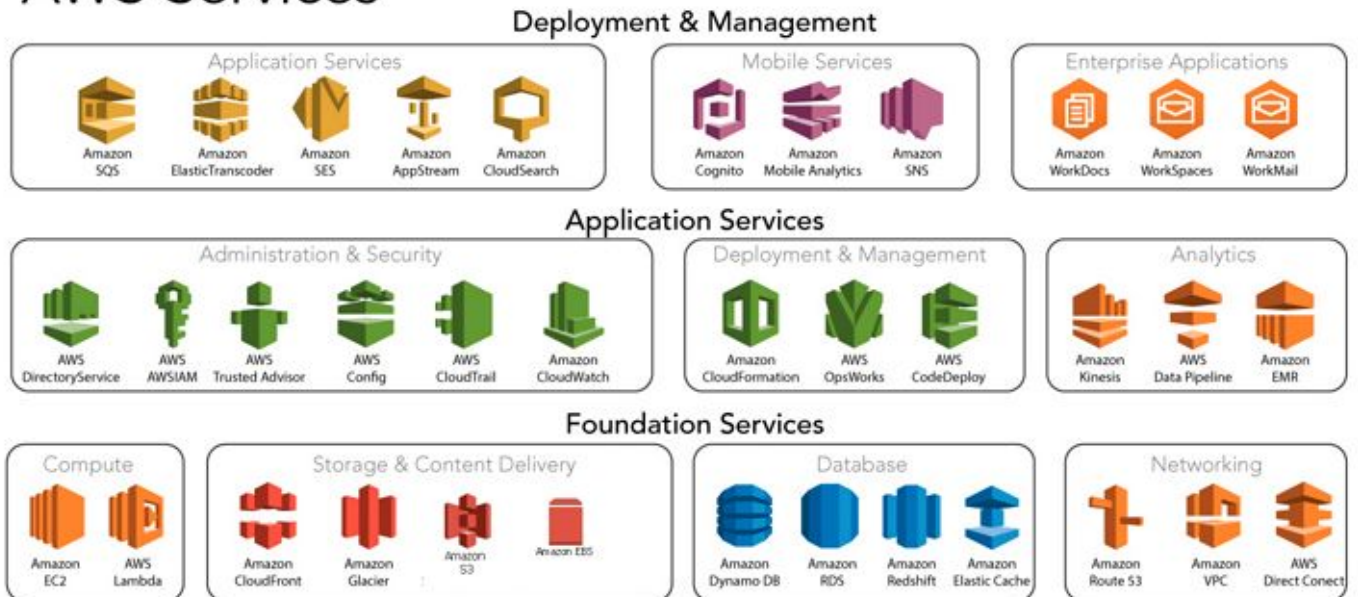   - AWS IAM
    - AWS KMS
    - AWS Shield
- ## Messaging Services

    The Messaging domain consists of services which are used for queuing, notifying or emailing messages.
    - Amazon SQS
    - Amazon SNS
    - Amazon SES
    - Amazon Pinpoint

Overview:

AWS Services

Pricing :

Linux Instance	AWS
Small (hourly)	$0.067
Small (monthly)	$49
Small (annually)	$353
Small (3 year)	$687
Medium (hourly)	$0.100
Medium (monthly)	$73
Medium (annually)	$519
Medium (3 year)	$1,026
Large (hourly)	$0.199
Large (monthly)	$146
Large (annually)	$1,043
Large (3-year)	$2,063
Extra large (hourly)	$0.398
Extra large (monthly)	$291
Extra large (annually)	$2,082
Extra large (3 year)	$4,089
2X large (hourly)	$0.796
2X large (monthly)	$581
2X large (annually)	$4,150
2X large (3-year)	$8,165